

**Application
for
United States Letters Patent**

To all whom it may concern:

Be it known that GUY STONE, DANIEL SMITH, ALEXEY SUHIH,
SALLY STONE and LAURA STONE

have invented certain new and useful improvements in

INTERACTIVE MULTIPLE-VIDEO WEBCAM CHATROOM

of which the following is a full, clear and exact description.

INTERACTIVE MULTIPLE-VIDEO WEBCAM CHATROOM**FIELD OF THE INVENTION**

5

The present invention relates generally to the process of using webcams in an Internet chatroom setting.

10 **BACKGROUND OF THE INVENTION**

Chatrooms are virtual lounges where a number of Internet users can meet to speak, or chat, about any subject of interest to them. The first Internet
15 chatrooms appeared in April 1995(1) and the concept has quickly become a staple in the Internet world. Chatrooms attract a variety of users from throughout the world for the purposes of live ``talk,`` which is typically represented in text form as users type in
20 and send their comments(2). Some Internet chatrooms also feature a single live photo image that users (also known as ``chatters``) can view once they enter the chatroom. These images are transmitted via a webcam (or ``webcam``) attached to the computer of
25 the chatter who wants his/her image transmitted. Chatters can view the live image of one other chatter using webcam technology(3). A chatter who wishes to offer his/her image via webcam can set his/her camera to take a snapshot of him/her at
30 his/her computers at preset intervals (i.e. every 30 seconds, 1 minute, etc.). In this way, the other chatters can see this person's image change at the same rate. The webcam can be positioned to take pictures of anything within the webcam's range (i.e.
35 the chatter's companions in the same room, other sections of the room).

0304230 "074000

5
10
15
20
25
30
35

[illegible]

5
10
15
20
25
30

This invention provides a software program that allows users to chat with each other while displaying live webcam images of more than one selected user, within an Internet chatroom environment. The webcam images are displayed at the top of the chatroom page, and chat text runs below the images. Different webcams may transmit their images in different size, but this invention automatically makes all the images appear in uniform size. The invention also automatically assigns each image a position on the chatroom screen. If the number of chatters falls below the number of available image positions (or some chatters do not have a webcam or do not want their images projected) the program automatically displays a preselected logo (i.e. the logo of the company running the chatroom). Another outstanding feature of this program is that chatters can select the webcam images they want to view while they are chatting. Each webcam has a URL (Uniform Resource Locator) which the webcam owner programs into the webcam after purchasing it. This program asks each chatter for his/her URL and then organizes all the URLs of incoming chatters so that their webcam images are readily available to other chatters. The program provides a running list of the screen names of all participants in the chatroom. When a chatter enters, his/her screen name appears on the list. When the chatter exits, his/her screen name disappears, too. If, for instance, Chatter 1 prefers to view a webcam image of Chatter 13 or Chatter 4, he/she can do so immediately by double-clicking his/her mouse on Chatter 13's screen name. Chatter 13's image will suddenly appear at the top of the screen alongside

the images of the other chatters that Chatter 1 has
chosen to view. The invention identifies each image
by screen name. Chatters who do not have a webcam
are identified by a common symbolic logo (i.e. the
5 logo of the company or organization running the
chatroom) in place of their image. The program
updates the symbolic logo at a predefined interval.

09:44:39.071200

5

This figure shows how the client program looks, how the elements on the interface work with one another to display the webcam images & text on each user's screen. The interactions that the chatter can take are also documented in this figure.

09044238.071200

DETAILED DESCRIPTION OF THE INVENTION:

Terminology Definitions:

5 Chatroom - An Internet-based technology that allows multiple users to virtually meet in one place and type messages to one another that will be visible to all within the room.

10 Web Camera - Any device attached to a computer that transmits images over the Internet, most commonly the World Wide Web.

WebCam - A generic term for any type of web camera.

15 Java Virtual Machine (or JVM) - A program that interprets compiled Java Code, which allows it to run on any computer platform.

20 Applet - A Java program that runs inside of a Java-enabled Web Browser.

SGML - A standardized markup language for defining the logical structure of a computer document.

25 HTML - A subset of SGML that is used to format documents over the Internet.

Multi-threading - The ability to run several threads at the same time. Each thread acts like a mini program that shares data with the main program.

30 Protocol - A standard way to send a message across some communication median.

35

09014238 "071200

Graphical User Interface (or GUI) - A Window-based system, where the user of the system uses a mouse to point and click.

5 Discussion Room - A separate room inside the main chatroom that tends to be focused on a separate discussion. A chatter can only be a member of one discussion room at a time, and all of the messages sent into other discussion rooms are not posted.

10

File Transfer Protocol (or FTP) (5)- A protocol that defines a way to copy files over the Internet.

15

Transmission Control Protocol (or TCP) (6) - An open standard that defines how to connect and transfer data over the Internet.

20

Username - Each user in the system is displayed by a name that they choose. All usernames have to be unique.

25

Client - A program that acts as the front end to each individual user and runs on each user's machine. It receives all the chatroom information from the server via the Internet.

Server - The part of the program that runs on a centralized machine and keeps the client programs synchronized.

09041238071200

Internet - The loose association of millions of computers that allows all users to communicate with one another.

5

All Words ending ".java" - The name of the source code file that a description deals with.

10 This invention provides a system comprising a method which allows users to chat with each other while displaying live webcam images of more than one selected user within a chatroom environment. It also provides a method in which the webcam images are displayed at the top of the page. The invention
15 also provides a method in which the displayed webcam images have a uniform size. It also provides a method in which the webcam images are automatically assigned a position on the chatroom screen. The invention also provides a method in which chatroom
20 users can select the webcam images they want to view while they are chatting. It also provides a method in which each user is given a list of other online users from which they can select webcam images to view. It also provides a method in which a list of
25 URLs from each user's personal webcam is requested and organized. The invention also provides a method in which each image is associated with an individual user. It also provides a method in which users who do not have a webcam will have a symbolic logo
30 appear in place of their image. It also provides a method in which the symbolic logo is updated at a predefined time interval. The invention provides a system which allows users to chat with each other while displaying live webcam images of more than one
35 selected user within a chatroom environment. The invention also provides a system in which the webcam

09041233 071200

images are displayed at the top of the page. It also provides a system in which the displayed webcam images have a uniform size. It also provides a system in which the webcam images are automatically assigned a position on the chatroom screen. The invention provides a system in which chatroom users can select the webcam images they want to view while they are chatting. It also provides a system in which each user is given a list of other online users from which they can select webcam images to view. The invention provides a system in which a list of URLs from each user's personal webcam is requested and organized. It also provides a system in which each image is associated with an individual user. It also provides a system in which users who do not have a webcam will have a symbolic logo appear in place of their image.

The invention also provides a system in which the symbolic logo is updated at a predefined time interval. It further provides a method in which the setting is an Internet chatroom; in which Java Programming Language is used; in which there is no limit on the number of users that are allowed to participate in the chatroom; in which well-defined Internet standards are used to transfer and display files; in which video capabilities are added to a standard web-based chatroom; and in which the setting is an Internet chatroom.

This invention further provides a basic text-based chatroom software that is written with the Java Programming Language and is distributed over the Internet. The webcam chatroom allows a user to view a live webcam image of the person with whom he/she is chatting. One unique characteristic of this

09044238 074200

5
10
15
20

25

30

35

allows the user to create a new one. The client is also responsible to retrieve list of users logged in to each discussion room and to retrieve messages from the current discussion room the user resides in.

The server program is responsible for getting the user information from the client. That information tells the server where it needs to download the webcam image from (the URL of the image), what the user has typed into the text box, and which chatters the user wishes to have displayed. The server then goes and downloads the images off the Internet (using FTP) and then sends the images to the client. The server also receives whatever text the client sends it and then resends it to all of the clients connected to the server. The server also keeps the clients updated with information pertaining to which users are connected and what discussion rooms are available.

Developer Notes:

1. How webcam images are displayed at the top of the chatroom page

The program periodically refreshes the webcam images by retrieving the chatter list from the Server, which contains chatters and their webcam URLs. The program then prepares the image by connecting to the Server via TCP. It reads the byte-array for each image. The image is initialized for the screen and placed at the top of the chatroom area. The corresponding source code is available in VCC_Chatter.java

10

3. How the webcams are assigned a position on the screen

20

4. How the system of selecting users works.

30

REFERENCES

- 1) Lynch, Keith, "Keith Lynch's timeline of net
related terms and concepts",
5 <http://keithlynch.net/timeline.html> , May 18,
2000.
- 2) McDaniel, Robert, "The Beginner's Guide to
Internet Chat", CNET,
10 [http://www.cnet.com/internet/0-3781-7-
1519050.html?tag=st.sr.3781-7-
1519051.subnav.3781-7-1519050](http://www.cnet.com/internet/0-3781-7-1519050.html?tag=st.sr.3781-7-1519051.subnav.3781-7-1519050) , October 28,
1998
- 15 3) iFriends Network, "About iFriends",
<http://www.ifriends.net/who.htm> May 2000.
- 4) CU-SeeMe Networks, "CuseeMe Networks: CU-SeeMe
Pro"
20 http://www.cuseeme.com/software/pro_bus.htm,
April 2000.
- 5) Postel, J. & Reynolds, J, "File Transfer
Protocol (RFC 959)"
25 <http://www.w3.org/Protocols/rfc959/> October
1985.
- 6) Postel, J. "NCP/TCP Transition Plan (RFC
801)", [http://www.cis.ohio-
state.edu/htbin/rfc/rfc801.html](http://www.cis.ohio-state.edu/htbin/rfc/rfc801.html) , November
30 1981.

09011333 071200